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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,424	09/02/2004	Yoshikazu Makioka	SAE-0030	1252

23353 7590 01/02/2008  
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WASHINGTON, DC 20036

EXAMINER
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HAVLIN, ROBERT H

ART UNIT	PAPER NUMBER
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1626

MAIL DATE	DELIVERY MODE
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01/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/506,424	MAKIOKA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Robert Havlin	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 14-20 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

**Status of the claims:** Claims 14-20 are currently pending. Claims 1-13 were cancelled when filed.

**Priority:** This application is a 371 of PCT/JP03/02422 (03/03/2003) and claims foreign priority to JAPAN 2002057419 (03/04/2002).

**IDS:** The IDS dated 9/2/2004, 2/2/2005, and 9/28/2006 were considered.

#### ***Election/Restrictions***

1. Applicant's election with traverse of group II in the reply filed on 10/17/07 is acknowledged. The traversal is on the ground(s) that there would be no search burden to examine both the product and a method of using in an extraction process. This is not found persuasive because the scope of search for processes of metal ion extraction is substantially different than a structure search of a phosphonamide compounds.

The requirement is still deemed proper and is therefore made FINAL.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delangle et al. (J. Org. Chem, 1996, v. 61, p. 8904-14) in view of Alberts et al. (J. Am. Chem. Soc., 1979, v. 101, p.3545-53).

The claims are drawn to a process for extracting rare earth metal ions using the compound of formula [1]. The dependent claims further limit the process by defining the organic solvent and situations where the extracted metal ion can go into either the aqueous or organic phase.

Teachings of the prior art

Delangle et al. teaches phosphonamide compounds (i.e. page 8905, compounds 8 and 5) which are members of the genus of Formula [1] of the instant claims in the context of their ability to complex metal ions in solution. The reference also teaches metal ion extraction experiments using a methodology to determine the capability of each compound to complex metal ions (reference cited on page 8911 reference 25(b)). The reference cited for this methodology is Alberts et al.

Alberts et al. teaches a methodology for determining the ability of compounds to complex metal ions. On page 3547, in table II the reference teaches complexation of metal ions (including Uranium, Lanthanum, and Cerium) from a water-dioxane biphasic mixture. The reference also teaches the adjustment of the pH to alter the complexation efficiency (page 3547).

Differences between the prior art and the claims

The difference between the prior art and the claims is that Delange does not specifically teach *rare earth* metal ions for extraction.

Finding of prima facie obviousness

One of ordinary skill in the art would reasonably be fully aware of biphasic extraction because it is fundamental knowledge in the art. Nevertheless, Delangle et al.

teaches extraction experiments using the compounds of the instant invention.

Furthermore, Delangle et al. cites Alberts et al. as the method by which they determined the capability of the compounds to bind metal ions. Within Alberts et al., rare earth metal ions are specifically taught in their extraction experiments. Therefore, one of ordinary skill in the art would immediately recognize that the compounds of Delangle et al. could also be used to extract rare earth metal ions in the same way as is instantly claimed.

### ***Conclusion***

All claims are rejected. Examiner would like to point out that the patent US 5,232,895 reads on and likely anticipates the non-elected claim 14.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Havlin whose telephone number is (571) 272-9066. The examiner can normally be reached on Mon. - Fri., 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, Joe McKane can be reached at (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

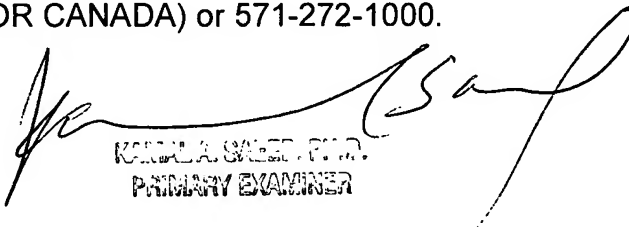
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Robert Havlin  
Examiner

RH



KIMLA S. SETHI, P.M.  
PRIMARY EXAMINER